

**FACTORS AFFECTING IMPLEMENTATION OF
INTEGRATED COMMUNITY CASE MANAGEMENT OF
CHILDHOOD ILLNESSES IN SOUTH WEST SHOA ZONE,
CENTRAL ETHIOPIA.**

Wase Benti (BSc)

A Research Submitted To College of Health Sciences, Department Of
Health Economics, Management and Policy; In Partial Fulfillment For
The Requirement For Master of Public Health In Health Service
Management (MPH-HSM).

**June, 2015.
Jimma, Ethiopia.**

Factors Affecting Implementation of Integrated Community Case Management Of Childhood Illness In South West Shoa Zone, Central Ethiopia.

Wase Benti (BSc)

Advisors:

1. Waju Beyene (BSc, MPH, Asst. Prof.)
2. Ayinengida Adamu(BSc, MPH)

June, 2015.

Jimma, Ethiopia.

Abstract

Introduction: *Integrated community case management is a program that allowed Health Extension Workers treat the three most common Childhood illnesses; pneumonia, Diarrhea and malaria through delivering closer and accessible care to community. In Ethiopia, this proven strategy is on stage of preparation for expansion, but few researches were done to assess the challenges encountered in the ongoing implementation.*

Objective: *The objective of the study was to assess factors affecting implementation of community case management of childhood illnesses in the health posts of selected woredas of South West shoa Zone, Central Ethiopia.*

Methods and materials: *Facility based cross-sectional study were employed. All functional health posts (99) and HEWs trained in ICCM (157) of four districts were included in the study. Pre-tested structured questionnaires and observation checklist was deployed to collect data on the study variables. Data was entered in to Epi data v.3.1 and transported to SPSS v.21.0 for analysis .Descriptive statistical methods were done to indicate the frequency of the variables and bivariate and multiple binary logistic regression analysis were used to determine independent effects of factors affecting ICCM implementation status.*

Results: *- based on mean percentage coverage of all health posts 39(39.4%) them were in good implementation category and the rest majority in poor category. During the survey, 24(15.3%) of kebelles were found lacking two HEWs, 26.8% had recommended three CHAs and 26(16.6%) lacking any CHAs. Only 39(39.5%) received supportive supervision by either of woreda or health center. Essential ICCM commodities were available in 87.93% of Health posts. After Multivariate regression analysis number of CHAs per kebele (AOR3.63,95%CI[1.16-6.41]),average hours of open health post per day(AOR 2.74,95%CI[1.38-5.61]),sessions community mobilization (AOR 4.26,95%CI[1.98-9.18]),proper documentation of reports and files (AOR0.041,95%CI[0.008-0.216])and onsite mentoring (AOR3.14,95%CI[1.65-6.52]) had disentangled independent effect on implementation status of ICCM services.*

Conclusion: *Inadequacy of HEWs and CHAs in kebelles as per the standard, irregular supervision, monitoring, lower hours of health posts and lower sessions of community sensitization were major challenges to better implementation of the program. Construction of shelters for HEWs by either of government or community was also crucial for optimal functioning of the ICCM services.*

Key Words: *- ICCM, HEWs, CHAs*

Acknowledgement

I would like to express my deepest gratitude to my advisors Mr. Waju Beyene and Mr. Ayinengida Adamu for their encouraging guidance, unreserved professional assistance and constructive comments during the development of this thesis.

My thanks also go to Jimma University College Health Sciences for providing me this opportunity to deploy my effort on exploring ever-emerging challenges and multifaceted problems facing Golden Community health programs.

My Family, I have no word for all of you; for I and my fruit of success was bough of your craving indulgence.

Lastly, I am in depth of encouragement of all others who are through the work by forwarding and caving their tributary ideas. Above all, I praise My Lord Jesus Christ for He is always my unfathomable Partner.

Abbreviations and Acronyms

ACT: - Artemesin Combination Therapy

APR : - A Promise Renewed

CHA : - Community Health Agent

CHWs: - Community Health Workers

CI/IHSS:-Catalytic Initiative for Integrated Health Service System

CMR: - Child Mortality Reduction

HEWs: - Health Extension Workers

HSAs: - Health Surveillance Assistants

ICCM: - Integrated Community Case Management

LQAS: - Lot Quality Assurance System

MDG: - Millennium Development Goal

MNCH: - Maternal, Neonatal and Child Health

NGOs: - Non-governmental Organizations

ORS: - Oral Rehydration Salts

RDT: - Rapid Diagnostic Test

RUTF: - Ready To Use Therapeutic Food

UNICEF: - United Nations International Children's Education Fund

USAID: - Unite State's Aid for International Development

WHO: - World Health Organization

Table of contents

Contents	Pages
CHAPTER ONE: INTRODUCTION	1
1.1 Background	1
1.2 Statement of the Problem.....	2
1.3 Significance of the Study	4
CHAPTER TWO: LITERATURE REVIEW	5
2.1 Access to Health care.....	7
2.2 Supervision and monitoring	8
2.3. Reliable Supply barriers	9
2.4 Health Extension Workers Related factors.....	10
2.5 Conceptual Framework	12
CHAPTER THREE: OBJECTIVES	13
3.1 General Objective	13
3.2 Specific Objectives.....	13
CHAPTER FOUR: METHODOLOGY	14
4.1 Study Area and period.....	14
4.2 Study Design	14
4.3 Source Population	14
4.4 Study population	14
4.6 Exclusion Criteria	15
4.7 Study unit.....	15
4.8 Sample size determination and sampling technique.....	15
4.8.1 Sample size determination.....	15
4.8.2 Sampling Technique.....	16
4.9 Study Variables	17
4.9.1 Dependent variable	17
4.9.2 Independent variables.....	17
4.10 Data collection tools and procedures.....	18
4.11 Operational Definitions	19

4.12 Data Entry and Analysis	21
4.13 Data Quality Assurance	21
4.14 Ethical Consideration	21
4.15 Dissemination plan	22
4.15 Limitation of the Study	22
CHAPTER FIVE: - RESULT	22
5.1 Socio demography and HEWs Related Variables	23
5.2 Service Access Factors	25
5.3 Supervision and Monitoring	26
5.4 Supply Related Factors	27
CHAPTER SIX: - DISCUSSION	33
CHAPTER SEVEN: - CONCLUSION AND RECOMMENDATION	37
7.1 Conclusion	37
7.2 Recommendation	39
References	42
ANNEX	45
Questionnaire	45
Gaafannoo	52

List of Tables

Table 1- Profiles of selected woredas of south west shoa zone, Central Ethiopia, 2015.....	23
Table 2- Distribution of HEWs factors and socio-demography of HEWs of South West Shoa Zone, 2015.....	24
Table 3-summary of availability of iCCM medical and diagnostic supplies in the health posts of ted Districts of South West Shoa Zone, 2015.....	28
Table 3-summary of availability of ICCM non-medical supplies and storage space in the health posts of selected districts of south west shoa zone, 2015.....	29
Table 4- Summary of Significant Bivariate and Multivariate logistic analysis of Variables Affecting implementation of ICCM in selected woredas of South West Shoa Zone, 2015.....	30
Table 5-summary of significant bivariate and multivariate logistic analysis of variables affecting implementation of ICCM in selected woredas of south west shoa zone, 2015.....	31

List of Figures

Figure 1-Conceptual framework developed after reviewing literatures for factors affecting ICCM implementation in south west shoa, central Ethiopia, 2015.....	12
Figure 2-Diagrammatic representation of sampling technique, South West Shoa Zone, March 2015.	16

CHAPTER ONE: INTRODUCTION

1.1 Background

Integrated Community Case Management (ICCM) is a community care strategy, which seeks to extend case management of childhood illness beyond health facilities to the community level so that more children have access to lifesaving treatments. Community health workers at lowest level health unit or in the community provide it during home visit. The program allowed HEWs not only managing pneumonia, diarrhea, malaria, malnutrition, measles .ear infection, and anemia but also provided 6-day training on strengthened supervision, improved supply chain management for essential commodities, and enhanced monitoring and evaluation (1,2). Delivery of care through community health workers (CHWs) can increase coverage of specific treatments and lead to substantial reductions in child mortality(3).

The iCCM package can differ based on particular contexts, but most commonly includes diarrhea, pneumonia and malaria diagnosis and treatment. For these reasons, various NGOs like UNICEF, WHO, USAID and other partners are working and supporting the iCCM strategy to train, supply and supervise front-line workers to treat children for diarrhea, pneumonia and malaria, using ORS and zinc, oral antibiotics, and artemisin based combination therapy (ACT) respectively. Their target is mainly toward low income and malaria-affected countries(4).

In 2010, just 12 countries in sub-Saharan Africa were implementing CCM of at least three illnesses, and only 6 sub-Saharan African countries were implementing CCM of at least three illnesses in at least 50% of the country's districts (5).

In Ethiopia currently, around 34,000 female Health Extension workers have been trained for one year formally salaried and deployed to the community, of which two of them assigned to one kebele of ideally 5000 residents. In 2010, after national policy change by adopting ICCM the country started implementing it in a phased manner starting in Oromia Region and currently on the stage of preparation for expansion. According to 2012, UNICEF report 11,754 HEWs had been trained in ICCM and deployed to 66 of 254 woredas.

1.2 Statement of the Problem

Despite current admirable accomplishment, progress must be accelerated and momentum must be sustained to meet and going beyond Millennium Development Goal 4 deadline in all parts of the world. If current trends continue, the world will not meet the MDG target until 2026 .The latest data from 2013 show that sub-Saharan Africa shoulders the world's highest under-five mortality rates. All 12 countries with an under-five mortality rate of 100 or more deaths per 1,000 live births are in sub-Saharan Africa. On average, one out of every 11 children born in sub-Saharan Africa dies before age 5. This is nearly 15 times the average rate (1 in 159) in high-income countries. Sub-Saharan Africa and South Asia remain the regions with the greatest numbers of child death(6). In 2013, about half of global under-five deaths occurred in sub-Saharan Africa and 32 per cent in South Asia. Among the top 26 countries shouldering the burden of 80 per cent of the world's under-five deaths, 19 are in sub-Saharan Africa(7,8).

Though Annual child deaths from pneumonia decreased by 44 per cent from 2000 to 2013—from 1.7 million to 940,000, it remains the leading infectious cause of death among children under-five, killing nearly 2,600 children a day. In 2013, it killed about 940,000 children with majority of victims are under two years(7).

Malaria every day in 2013, killed more than 1,200 under five children or over 450,000 children a year. Most of these deaths occurred in sub-Saharan Africa. Consequently, major inroads have been made against the disease as a result of stepped-up funding and programming. Coverage of key prevention and treatment interventions has risen dramatically over the past decade like regular use of insecticide-treated mosquito nets (ITNs)to prevent malaria transmission, usage of potent anti-malaria parasite (ACT) as first line treatment , to reduce deaths among children.(8)

Diarrhoea next to pneumonia also accounts for 9 % of all deaths among children under age 5 worldwide. In 2013, this translated into 1,600 young children dying each day, or about 580,000 children a year, most of them living in South Asia and sub-Saharan Africa(9).

Ethiopia is one of the 10 countries with the highest numbers of neonatal deaths; it is currently ranked fifth in the world as having the greatest potential to save maternal, perinatal and neonatal lives by 2025. Despite global movements like “A Promise Renewed” (APR) has helped galvanize a national response in Ethiopia to address existing challenges and disparities that threaten the lives of children to reach the most vulnerable and marginalized children with vital life-saving interventions, over 205,000 children still do not reach their fifth birthday. Nearly 43% or 88,000 of the 205,000 children under-five are dying each year mostly from preventable or easily treatable diseases in their first 28 days (10).

Though Ethiopia has reached MDG target of 68 CMR per 1000 live births in 2012, it should sustain the achievements and shift to global Future child mortality reduction target of bringing it down to 20 per 1000 live births. With this regard, strengthening current tools that fueled the achievements like ICCM through scientific investigation of the constraints and sharing best experiences during scale up helps the country deliver accessible, affordable and quality service. Nationally, this research can be taken as the first rigorous to assess factors affecting implementation of ICCM by Health Extension workers working in the program implementation areas that can be the base for further study and crucial ingredient in improving the service delivery. As Ethiopia, there is no research done on factors hindering the implementation of the program at community or health post level by Health extension workers that could help identify major challenges and propose for possible obstacles for further expansion in other parts of the country.

1.3 Significance of the Study

According to 2013 UNICEF report, ICCM program is being implemented in Ethiopia since 2012 started in sampled or piloted woredas of Oromia ,Amhara, Tigray and SNNP regions and It is currently on stage of preparation for expansion. Consequently, there is a great deal for scientific investigation of the whole trends during program implementation. Within these sampled woredas, it had been implementing for the past three years facing many challenges from various angles. Nationally, there is no research conducted to assess factors affecting the implementation of the program in the piloted areas including South West Shoa Zone. The aim of this study was to investigate for factors affecting the implementation of ICCM services; that it can be baseline for further researches in the area and crucial ingredient for better implementation of the program during expansion. Finally, it also expected to help managers and policy makers for informed decision on stepping down child mortality.

CHAPTER TWO: LITERATURE REVIEW

Child mortality is the death of infant and child from birth to five years of age. The dramatic decline in preventable child deaths over the past quarter of a century is one of the most significant achievements in human history. The global under-five mortality rate has declined by nearly half (49 per cent) since 1990, dropping from 90 to 46 deaths per 1,000 live births in 2013. The under-five mortality is falling faster than at any other time during the past two decades. Since 1990, many parts of the world reduced their child mortality rate where East Asia and Pacific region are the leaders by reducing two thirds. Africa is the continent with harsh environment for child survival. Central and West Africa reduced from 197 to 109, sub-Saharan (179 to 92) Africa and Eastern and South Africa (165 to 74) per 1000 live births and 44%, 48% and 55% reduction respectively. Between 2005 and 2013, sub-Saharan Africa as a whole reduced the region's under-five mortality rate more than five times faster than it did between 1990 and 1995 (annual rate of reduction from 1% in 1990-1995 to 5.1% in 1995-2013) (11).

Although infant and child mortality rates have declined appreciably in most developing countries, children under the age of five continue to die at unacceptably high rates, often of preventable causes like preterm birth complications (17%), pneumonia (15%), intrapartum-related complications (complications during labour and delivery; 11%), diarrhoea (9%) and malaria (7%). Globally, nearly half of under-five deaths are attributable to under nutrition. Pneumonia, diarrhoea and malaria together claim the lives of 3 out of every 10 children who die before the age of five (11).

Ethiopia has taken many measures to attain universal access to and delivery of high impact interventions. The government has launched several initiatives and integrated programs to reflect a multisectoral approach to child survival and development that covers health, nutrition, water, sanitation and hygiene promotion, education and child protection as well as a commitment to deliver these services via facilities, communities and outreach.

These key measures includes Integrated Community Case Management (with community Based New-born Care , the ONE WASH National Program (OWNP); the National Nutrition Program; and scaling up of the Community mobilization initiative, a 1-5 network, to consolidate the gains with the roll out of a Health Extension Program through a network of over three million female volunteers to engage the community in planning, implementation, monitoring and evaluation of health, nutrition, WASH and Education interventions at the community level (12).

Today, there is a vast evidence base, which supports a multifaceted program design to enhance performance, effectiveness and sustainability of CHW programs. Various tools are now available to guide decision-makers into improved program design choices which can address the many facets required to ensure functionality (13).One of such tool is ICCM composing eight programmatic components derived from evidence-based practices which provides simplified benchmarks against which to assess country CHW guidelines and implementation in the field(13).

In general overview, the research findings on the use of this tool show weaknesses in implementation, even where CHW policies are strong. NGOs focus especially on building engagement at the community level and can have key roles in the motivation, support, training and supervision of CHWs. In low resource contexts direct support might be given in the form of finances, staff or supplies, while other areas where government programs are more advanced NGOs may be more focused on advocacy or evaluation of existing initiatives(14).

In this study for clear understanding of factors affecting the ICCM service coverage, they are organized into dimensions. Based on Program components and major areas of research findings done in different African countries we can categorize the factors affecting the implementation of ICCM in the following ways.

2.1 Access to Health care

Cross sectional study conducted in 32 health facilities selected from three countries (Malawi, Mali, and Zambia) modeled the potential contribution of community case management. The main issue that needs to be addressed in ICCM implementation is pertaining to effective access by the targeted population. Effective access is the proportion of the study population with geographic access, corrected for other barriers, staffing patterns, and medicine availability. The study showed that there is still low awareness in seeking care among the needy and better beneficiaries of the service (15,16).

Another area that needs to be assessed for ICCM program is issue of community awareness of the services in terms of meetings they participate. For instance, qualitative study done in Uganda explored about the community's awareness w. Failure of the health system to secure regular community mobilization and supplies hindered adoption. Optimal functioning of iCCM programs will require community sensitization and targeted health systems strengthening to enhance observable program benefits like reduced child mortality(17).

Qualitative study conducted in rural Kenya indicated that both program managers and HSAs positively perceived the program. HSAs reported increased feelings of usefulness and respect in the community, although they also perceived their workload to have increased with iCCM (18).In addition ,another limiting factor to service availability in communities was CHW's un-availability at health post especially those who do not live in their catchment area that resulted from low community involvement (housing,...etc.) in planning and managing community service for initiation and sustainability of the services (19).

The systematic review done by UNICEF in 2012 summarized challenges to scale up of ICCM in six high burden African countries to address challenges during implementation of the program like limited access to appropriate treatment for pneumonia, diarrhea and malaria through catalytic Initiative/IHSS including Ethiopia .from the review including financial barriers, care seeking behavior and low awareness of the rural community were the main challenges. (27)

2.2 Supervision and monitoring

Supervision and monitoring is a crucial program component with its inconsistency leading to failure of timely response to challenges and under accomplishment of intended plan. However, there is still few researches conducted to depict supervision and monitoring trend of iCCM implementing countries. The study done in rural Uganda also found that supervision and drug supply in the first year were less than optimal. Less than 40% of HSAs included in the sample had received an iCCM-specific supervisory visit in the previous 3 months, and only 16% received a visit that included clinical observation of case management .Another challenge relates to the linkages between the HSAs and the health center level for timely referral, improved monitoring, onsite mentoring and supervision. One half of children requiring referral were not appropriately referred(20).

The 2012 UNICEF review reported that data on utilization of iCCM interventions meaning numbers of children under five treated is essential to inform program management decisions, program evaluation efforts and to fulfill UNICEF's reporting requirement to CIDA. Absence or culture of using household surveys using Lot Quality Assurance Sampling at district and sub-district levels in order to improve the feasibility of more frequent and/or more decentralized program monitoring was the major problem. (27)

2.3. Reliable Supply barriers

Baseline assessments in Ethiopia, Malawi, and Rwanda conducted in 2010 provided information on the strengths and weaknesses of existing CCM supply chains for five main products: antibiotics for pneumonia, oral rehydration solution, Ready to Use Therapeutic Food, Zinc, and artemether/lumefantrine. The study mainly focused on three preconditions that can be problems for the provision of the service like Supply chain knowledge and capacity among CHWs and their supervisors, Product availability at CHW resupply points and thirdly availability of appropriate transportation.

The assessments tested the strength and validity of causal pathways that were believed to influence availability of CCM products among community health workers (CHWs) for treating common childhood illnesses. In Malawi, 47% of CHWs had standard operating procedures available compared with 4% of CHWs in Ethiopia and Rwanda(22).

The other common challenges was frequent stock out of supplies related with limited capacity for forecasting needs have led to breakdowns in service provision in the community. These disruptions will, in the long run, undermine the credibility of the CHWs and the likelihood that families will seek care promptly when children show signs of illness. Similarly, the study prioritized the causal factors tied with supply as delays in receiving drugs and other supplies (59%), lack of transport (47%), interference with personal work (30%), and lack of lighting at night (25%) (23).

Study from Malawi conducted to review the scale up of iCCM and summarized factors that have facilitated and affected the program implementation. Over all 131 HAS s were surveyed from six districts in September 2009; Frequent stock outs of medicines, Limited district budgets and stock outs at health centers where HSAs are supposed to restock their supplies, combined with limited capacity for forecasting needs have led to important breakdowns in service provision in the community. Secondly, Scheduling in light of other duties other than child treatment at health posts. Thirdly, there was low linkages between the HSAs and the health center level for timely referral, improved monitoring, and supervision(24).

From systematic review of UNICEF in 2012 drug shortages not only delayed implementation, but also stock outs affected demand for iCCM services, as well as moral and retention of CHWs(29). One possible explanation might be that where products such as Rapid Diagnostic Tests (RDTs) and Artemisin Combination Therapies (ACTs) are provided for free Like Ethiopia, there is a lack of timely ordering and effective distribution to the districts, health centers and HEWs. This conveyed the importance of recognizing that the efficiency of iCCM supply chains will still be dependent on the overall strength and capacity of the government supply, logistic, information and management systems (27).

2.4 Health Extension Workers Related factors

Qualitative study from Malawi tried to explore health workers' and managers' perceptions about CCM provided by health surveillance assistants (HSAs). There were 28 managers from different positions and 29 HSAs. CCM benefit of the community was discussed in 3 of 4 HAS focus groups and in 17 of the 29 manager interviews. The study also conveyed demotivating factors to ICCM implementation as reported by HSAs like Increased workload and irregular hours. The HSAs also complained about the time burdens associated with traveling long distances to the health centers to restock drugs. Aside from time burdens, HSAs reported paying out-of-pocket for transport to collect drugs and lamp oil and candles to see patients at night. (25)

In Ethiopian context, there is only one study conducted on ICCM that was done by Jimma University (IIP-JHU and ABH Services, PLC, a private research firm). In need of iCCM evaluation, they conducted an assessment of the strength of the iCCM through an "implementation snapshot" and quality of care study in health posts. The survey were conducted in Jimma and West Hararghe zones of Oromia region and assessed the scale-up and the intensity of the iCCM program and measured the quality of iCCM services provided by Health extension workers (26).

Since it was conducted immediately after training the findings were good. Health posts saw an average of 16 sick children in the previous one month. These results show that iCCM can be implemented at scale and that community-based HEWs can correctly manage multiple illnesses. However, after that the achievements may not be sustained due to many factors discussed in other studies above.

Systematic review conducted in Ethiopia, Uganda and Tanzania explored about drawback related to the deployment, supervision, motivation and retention of community health workers which are the backbone of iCCM. In Ethiopia, key informants noted that a significant number of health posts were closed while health extension workers (HEWs) were undertaking community visits in villages. Retention of CHWs due to lack of a longer-term career incentive and perspective were also prevalent. (27). Similarly, during an assessment mission in Malawi, HSAs complained about the lack of a career path for them like opportunity for additional training to become assistant nurses with increased responsibilities and profile (28).

2.5 CONCEPTUAL FRAMEWORK

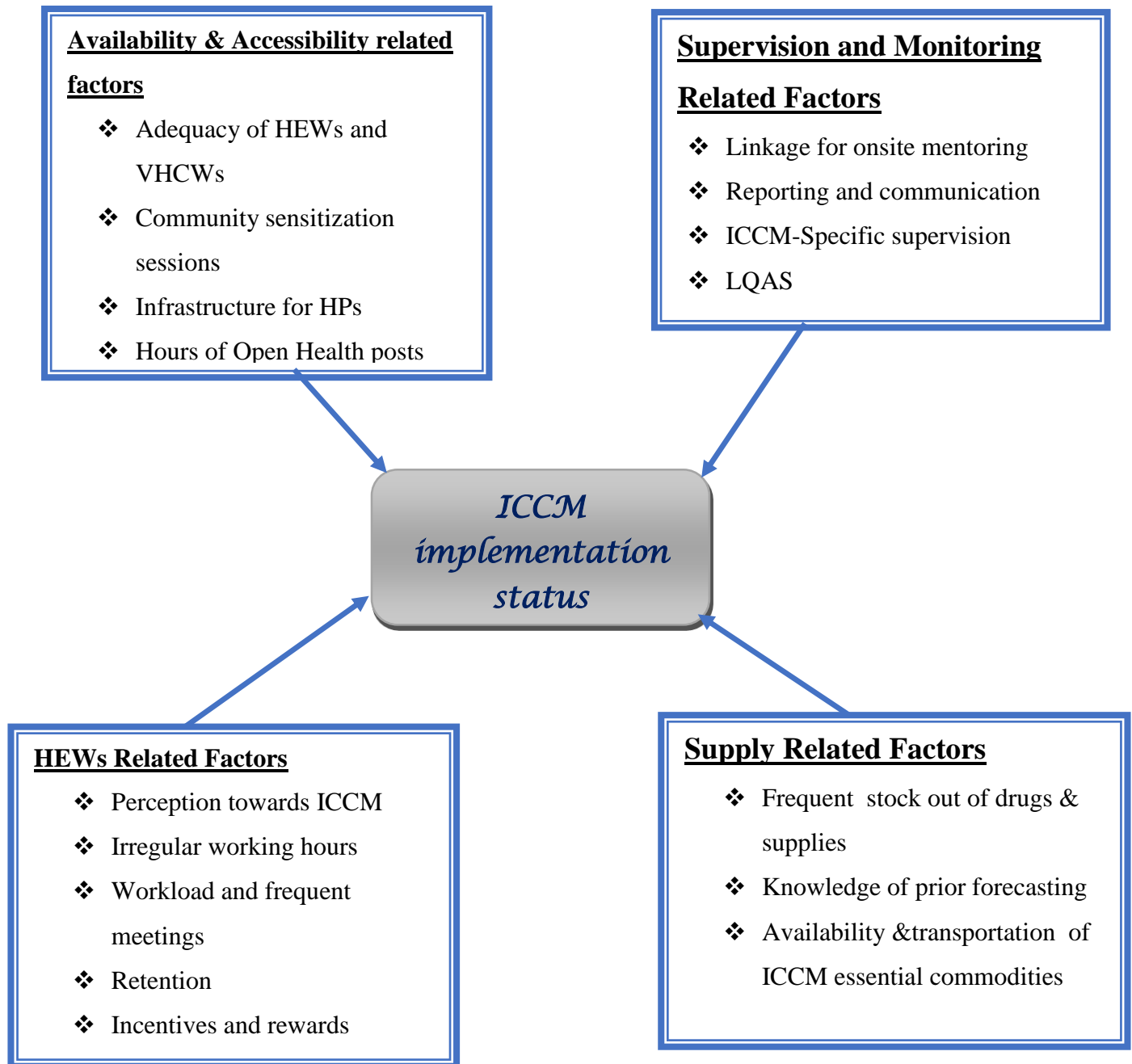


Figure 1-conceptual framework developed after reviewing literatures for factors affecting ICCM implementation in south west shoa, central Ethiopia, 2015.

CHAPTER THREE: OBJECTIVES

3.1 General Objective

- To assess factors affecting implementation Status of ICCM of childhood illness in Selected Woredas of South West Shoa Zone, Central Ethiopia, 2015.

3.2 Specific Objectives

- To identify ICCM service delivery status at Health Post
- To assess factors affecting ICCM implementation

CHAPTER FOUR: METHODOLOGY

4.1 Study Area and period

South West Shoa Zone's Capital; Wolisso is located 116 km South West of the capital, Addis Ababa. It has a population of 1,110,011 divided into 12 woredas including One Urban (wolisso town) woreda and 268 kebelles with most of its part exposed to malaria. Zonally, there are 182,375 under-five children. Around 89% of the population lives in rural area and 11% in urban. Regarding Health Facility Coverage there are One non-governmental and one Governmental Hospitals (excluding the three Hospitals under construction), and a total of 54 health centers having 253 health posts (424 HEWs) under them. In addition, there are around 72 private clinics of different types and 28 drug store in the zone. Pneumonia, diarrhea and malaria are among the top diseases in the under-five outpatient departments of the health institutions in the Zone. The climate of the Zone is 24% *dega*, 69% *woinadega* and 7% *kolama*.

The survey was conducted in four woredas of the Zone. The selected four woredas of south west shoa zone had 99 functional health posts with working 163 Health Extension workers. Data collection was conducted from 16/03/2015 to 30/03/2015 G.C.

4.2 Study Design

Facility based (Health Post) based Cross-sectional study design using mixed methods were employed.

4.3 Source Population

All Health Extension Workers deployed in all Health posts of South West shoa zone of Oromia Region, Ethiopia.

4.4 Study population

All HEWs working in all health posts of the selected four woredas of South West Shoa Zone.

4.5 Inclusion Criteria

- ★ HEWs working in the health posts of the selected woredas; who had training on ICCM and have been implementing for at least six months post training
- ★ All functional health posts in the study woredas were included. In cases where an HEW was providing clinical services, but where an official health post structure had not been constructed, the HEW's primary location for providing case management services was considered as the health post.

4.6 Exclusion Criteria

- ★ Health Extension Workers who were ill and on leave during collection were excluded from the study.

4.7 Study unit

Health Extension Workers in the selected woredas those who met inclusion criteria were the final unit of the study.

4.8 Sample size determination and sampling technique

4.8.1 Sample size determination

From total twelve woredas in the zone, 30% of them meaning four woredas were taken as representative by using WHO survey rule (31). This is because of geographical dispersion of woredas and health posts that poses scarcity of resource for collecting data for the study. Secondly, all of the woredas started implementing the ICCM services simultaneously, so that findings of sampled woredas can represent others. The selected four woredas consists of 99 health posts with deployed 163 Health Extension workers. All Health workers working in the four woredas who met Inclusion criteria were included in the study.

4.8.2 Sampling Technique

The four selected woredas were randomly identified by lottery method. All health posts in the four woredas were included and 157 Health Extension workers in the woredas; who met the inclusion criteria were taken as representative. During the study, all health posts were included but five HEWs were excluded from the study; since they did not pass inclusion criteria (two not trained, three on leave). Thus, sample included all other Health Extension workers (157) in the health posts of the four woredas.

The following schematic presentation shows the details of sampling procedure (Fig2.);-

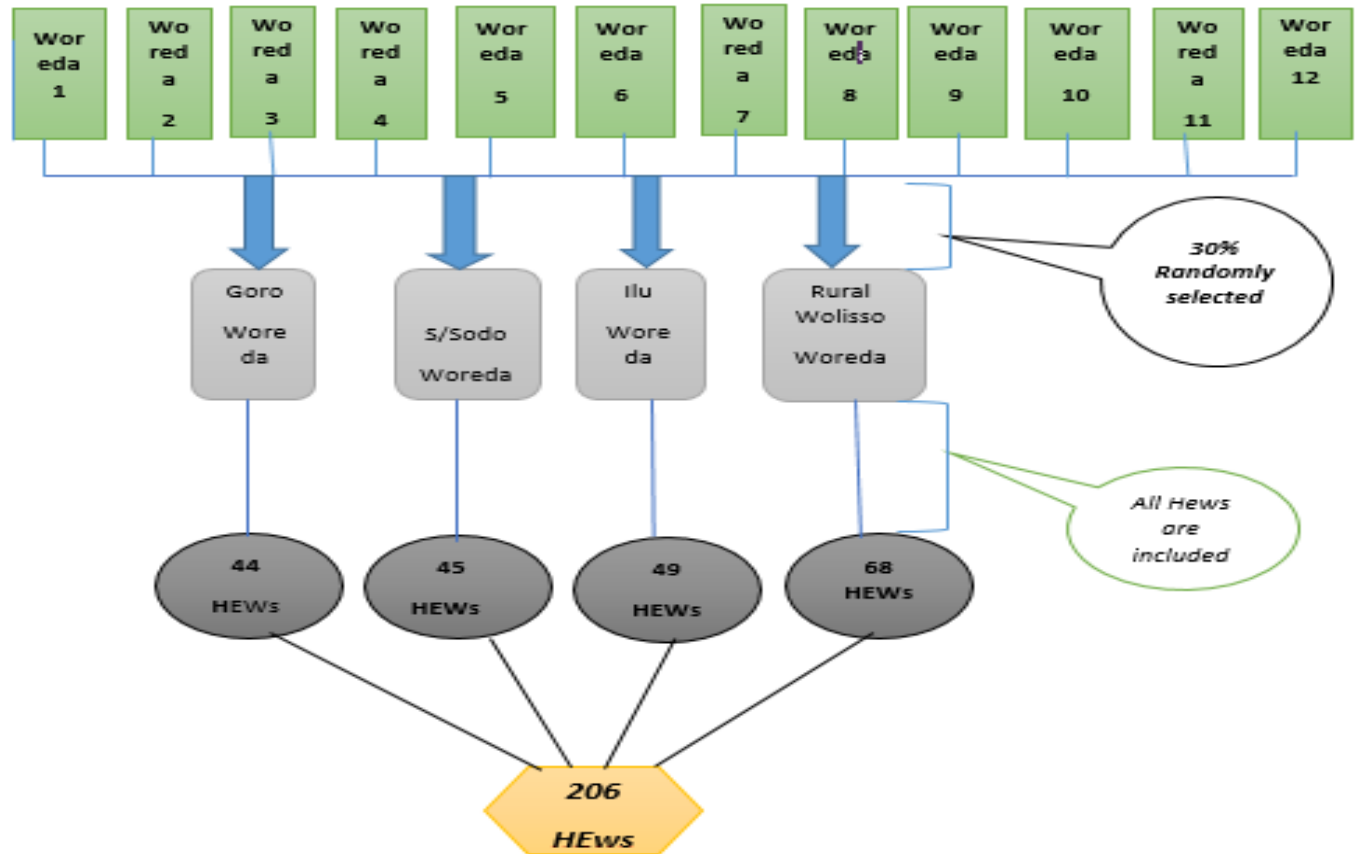


Figure 2-Diagrammatic representation of sampling technique, South West Shoa Zone, March 2015. Finally, all of 157 HEWs who were all deployed in Health posts of four woredas were included in the study.

4.9 Study Variables

4.9.1 Dependent variable

- Implementation level of ICCM of childhood illness services

4.9.2 Independent variables

I. Service access Variables

- ✓ Source of water and electric power for HPs
- ✓ Adequacy of HEWs and VCHWs in the kebele
- ✓ Hours of Open Health posts
- ✓ Places HEWs provide clinical services
- ✓ Documented Community mobilization activities
- ✓ Most common place of service provision

II. supervision and Monitoring variables

- ✓ Onsite mentoring of HEWs
- ✓ Health Post's ICCM report and LQAS
- ✓ Clinical practice of HEWs at Health center
- ✓ Bi-annual PRCM of HEWs
- ✓ Documented feedback from Health center or Woreda
- ✓ Training of HEWs on ICCM

III. Supply related variables

- ✓ Availability of essential commodities of ICCM
- ✓ Availability of non-pharmaceutical supplies
- ✓ Mode of transportation of commodities from resupply point
- ✓ Forecasting of future demand

IV. Health Extension Workers Related Factors

- ✓ Socio demography of HEWs
- ✓ Place of residence of HEWs
- ✓ Perceived benefit of ICCM to their service
- ✓ Session of Meetings per week
- ✓ HEWs retention from the site
- ✓ Incentives and appreciative rewards from community and government

4.10 Data collection tools and procedures

The survey instruments and primary indicators of implementation coverage were adapted from the WHO Health Facility Survey tool, a survey of Health Surveillance Assistants in Malawi, and the CCM Global Indicators (12, 27). This structured questionnaire were translated into Afan Oromo and then back to English. The Afan Oromo version was used for data collection from Health Extension workers. Observation of health post was also conducted for availability of ICCM supplies by checklist. There were eight data collectors who had diploma in nursing and four supervisors who were first-degree holders in Nursing/public health Officers; who were fluent in Afan Oromo. All sampled Health extension workers in the Health post were asked to show their supply record, sick baby registration books and annual plan of their health post's activities, past one year ICCM reports and any documented supervision feedback and also asked for any onsite mentoring they received and respond to the questionnaire.

4.11 Operational Definitions

Community case management (CCM):- is management; including assessment, classification, and treatment of childhood illnesses and counseling of caretakers, carried out by Health Extension Workers(HEWs) at the community level (including at health posts in communities .

Integrated community case management (ICCM):- is integrated community case management carried out by a paraprofessional health worker at the community level of all of the following childhood illnesses: pneumonia, diarrhea, malaria, malnutrition, etc.

.ICCM Service Delivery: - is diagnostic and curative services provided for the three most common childhood illnesses (Pneumonia, Diarrhea and Malaria) by Health Extension Workers based on standardized treatment guideline, the so-called ICCM chart booklet at the community or Health post level.

Live births: When a fetus, whatever its gestational age exits the maternal body and subsequently shows any signs of life such as voluntary movement, heartbeat, umbilical pulsation for however brief a time and regardless of whether Umbilical cord and placenta are intact (WHO 1950). Is any birth of baby including stillbirth regardless of physiological condition of the newborn.

Pneumonia: - is contextually defined as presence of the three common sign and symptoms (cough, fever and fast breathing) and additionally other manifestations excluding signs of severe pneumonia.

Diarrhea:-is described as any type of diarrhea or fecal fluid loss with above normal frequency

Malaria: - is febrile disease of confirmed plasmodium family parasites by RDT test, which may depend on malaria condition of the area where fever can be taken as malaria in absence of diagnostic supplies.

Community Health Workers:-are all voluntary and paid health workers selected from and deployed to the local community or kebele for serving them with basic and primary health services

Reliable supply: - Is the availability of all necessary essential and non-essential commodities of ICCM whenever needed with adequate quantity and reliable stock from the re supply point.

Essential commodity:-are the crucial medical and supplies necessary for initiating and providing ICCM services for the community by Health extension workers.

LQAS: - stands for Lot Quality Assurance System and is method of validating quality of reports reported by HEWs by taking sample from the report contents and cross checking it with their register and more than 85% validity is accepted.

ICCM Implementation Status: - is coverage level of ICCM services of the three common childhood illnesses (Pneumonia, Diarrhea, Malaria) together with other diseases of under-five children treated by HEWs that are all recorded on ICCM registration book or generally total percentage coverage of total treated sick babies in a year by expected sick babies per that year that is annual plan of that health post. In this study implementation of the ICCM service is taken as good if the percentage of treated and expected (from each health posts annual plan); sick baby consultation of the health post is greater than 35% and poor if below that level based on the mean performance of total health posts.

Health Post: -Is the lowest level of Health Unit in Ethiopian Health care hierarchy levels. It is constructed by either of Community or government for HEWs to provide services. In cases where there is no Constructed, health post the primary place where HEWs provide clinical service is taken as health post.

4.12 Data Entry and Analysis

Data was edited, coded and entered into Epi data version 3.1 and exported to SPSS 21.0 statistical software for analysis. Then by using SPSS descriptive statistics such as mean, median, SD, percent and frequency was done. Bivariate binary logistic analysis using stepwise elimination approach was done and all explanatory variables, which have an association with the outcome variable at p value of less than 0.25, became candidate for multivariate analysis. Then multiple binary logistic regression analysis was done to determine independent effect of explanatory variables on the outcome variable. Conclusions were made using P value < 0.05 and AOR with 95% CI to measure independent effect of factors to the implementation status of ICCM services package. Model fitness was checked by using Hosmer Lemeshow Value of greater than 0.05.

4.13 Data Quality Assurance

There was eight data collectors who has diploma in nursing and 4 supervisors who has first degree on nursing/public health who are fluent to local Afan Oromo. Data collectors were all trained in ICCM and again trained for three days on the objective of the study, method of data collection, interview technique & context of questionnaire. Four guiders (one from each woreda) were used to facilitate data collection. The tool was pretested in one of neighboring district's (Sadden Sodo) four health posts to check for consistency and little omission and correction was performed. Data was checked for completeness, accuracy, and consistency by supervisors & principal investigator after the data collection on daily base. The preset questionnaire were translated into Afan Oromo and then retranslated back to English by another person to check for consistency.

4.14 Ethical Consideration

Ethical approval and clearance were obtained from Jimma University College of public health and medical science and Oromia Regional Health Bureau, Ethical Board. Letter of cooperation were also obtained from South West shoa zone Health Department (MCH) to the four woredas and then

to respective kebelles/health posts/. Verbal informed consent was confirmed from HEW for assuring confidentiality and by informing the purpose of the study and use of data only for research purpose.

4.15 Dissemination plan

The findings of this study will be presented to Jimma University College of public health and medical science academic staff, distributed to South West shoa zonal health department, the four woredas and to Save the Children Zonal ICCM office. The findings may also be presented in different seminars, meetings and workshops and published in peer reviewed scientific journal.

4.15 Limitation of the Study

Due to resource constraints, this study only aimed to assess factors related with above categories excluding other potential factors like issues related with quality of services provided by Health Extension workers and potential factors that can be explored from deeper qualitative study at the community level.

CHAPTER FIVE: - RESULT

A total of 157 Health extension workers deployed in 99 health posts who met the inclusion criteria from four districts of the study area were interviewed. Five HEWs were excluded because they were newly hired and not trained in ICCM .Total of 99 health posts were visited and assessed for supply and record checklist during an interview. Based on sick-baby report of one year back percentage of service coverage (treated under-five by annual plan) for each health posts was calculated. Then, mean of the percentage coverage of each health posts annual were taken as cut-off point to dichotomize implementation level of ICCM service. The implementation status was taken as good for those above the mean (35%) and poor for others below that mean. From the overall health posts in the study 38(38.4%) were found in good implementation category and 61(60.6 %%) poor implementation category of ICCM services.

TABLE 1- PROFILES OF SELECTED WOREDAS OF SOUTH WEST SHOA ZONE, CENTRAL ETHIOPIA, 2015.

S/N	Woredas	Health Centers	Health Posts	HEWs	Total population	Under-five children
1.	Bacho	4	21	36	93,649	15,387
2.	Goro	4	18	34	56,726	9,320
3.	Rural Wolisso	9	36	53	128,375	21,092
4.	Wonchi	6	24	34	115,846	18,999
	Total	23	99	157	394,596	64,798

5.1 Socio demography and HEWs Related Variables

Due to simultaneous abruption of the integrated community case management of the common childhood illness program in the zone; all Health Extension Workers of the Zone had received the

training in the late 2012 and the initiation of the implementation can be taken as similar among all woredas. From overall 163 HEWs, five HEWs were excluded from the study due to that two were not trained and three were on annual leave.

The ages of the HEWs ranged from the youngest of 22 to 32, with a mean age of 26.1years \pm SD 2.32. From these majority 135(84.4%) of them were married and 22(15.6%) were single.

The work experience of Health Extension Workers meeting the study criteria had scope of 2 to 8 years and mean experience of 4.5 years \pm SD 1.40. More than 83% (130) of HEWs reside in the kebele they serve and few of them 17% (27) work traveling from neighboring towns or kebelles. Over half(54.8%) of the workers participate in meetings at least once, 35% twice per week and only 10.2% of them had no meeting in the week other than their routine health activities.

From the Health Extension Worker's Point of View 44.6% (70) of them described the initiation of the ICCM had increased their acceptance from the community, while 47.1% (74) health extension workers viewed its benefit as professional advancement in curative services they provide in previous time. Only two (8.3%) responded as it has no contributory benefit for them.

Table 2- Distribution of HEWs factors and socio-demography of HEWs of S/W/Shoa Zone, 2015.

S/N	HEWs Related Variables	Frequency (No),n=157	Percent (%),n=157
I.	Age	Min-22yrs,Max-32yrs,Mean-6.06yrs,SD±2.322	
II.	Marital Status		
	☆ Married	135	84.4
	☆ Single	22	15.6
III.	Work Experience	Min-2yrs,Max-8yrs,Mean-4.54yrs,SD±1.403	
IV.	Place of Residence		
	❖ Within kebele	130	83
	❖ From other	27	17
V.	Perceived Benefit of ICCM		
	• Professional advance	70	44.6
	• Community Acceptance	74	47.1
	• No benefit	13	8.3

All Health Extension workers were asked for any motivation or promotions provided to them from either of community and government. For 16(16.16%) of Health posts community constructed shelter for them to live in the kebele, for 20(20.2%) the government in collaboration with Woreda Health Office built the house for them; but for 63(63.6%) neither of them helped them in case of residential house and consequently live in their private/rental house and even with some transport from other kebelles.

Starting from recent time (two years) there was 11(7%) Health Extension turnover from the health posts under study. In regard with educational opportunity, 11 HEWs meaning 7% have got educational opportunity by government from the surveyed health posts.

5.2 Service Access Factors

During the survey, in 83 (83.8%) of the total health posts two or more HEWs were deployed where as in 16(16.2%) only a single Health Extension worker were available and no Health Post was found lacking one worker.

In addition, only 27(27.3%) of the Health posts had recommended community Health Army (CHA) of greater than or equal to three per kebelles with 26 (26.3%) lacking any assigned CHA and the rest majority with one or two of them per kebele.

Concerning infrastructure coverage of the health posts, around 96(97.1 %) get their water source from protected source (including hand pipe 75(75.8%) and wheel 21(21.3%), only 3(1.9%) had access of pipe line and 1.9% goes to lake to fetch water. Additionally, 17.2% of the total health posts have access of electric power for serving the community during night times but still the majority 82.8% are in use of kerosene or fuel. As per the regulation of malaria and fever cases management claimed by MOH and Zonal Malaria control Office all fever cases should be tested for malaria using RDT at Health Post level .Hence, all of them responded that they test for malaria for all fever cases and record as negative depending on the negative result of RDT.

5.3 Supervision and Monitoring

As it is set in the inclusion criteria Health Extension Workers participated in the study were all trained in ICCM and no any Health Post were found lacking trained HEWs on the program. The Health Extension Workers send ICCM report quarterly together with other reports to their Woreda through Health Center on 1-30 basis of each of the three months.

During observation and document review of the Health posts, 66(66.7 %) Health posts had copy of all ICCM reports they reported; whereas the others 33(33.3 %) had missing report in their document of 12 months back from the study period (four quarters/ January 2006 E.C to December 2007 E.C).Amazingly in all of the available reports no LQAS was done for all reports.

The Study reported that 39(39.4%) of the health posts received supportive supervision on ICCM that included registration review and case observation, while the remaining 60(60.6%) were not reached by either of the Woreda and Health center ICCM focal persons.

Few Health Extension Workers (only 2.6 %) had gone to their catchment's Health center for professional advices and practical attachment in regard with the service they provide; while others had no hint for it and no linkage with their health center.

All of the Health Extension Workers has participated in review meeting at woreda level at least twice per last one year. However, written or documented feedback from Woreda or Health Center was found in 63(63.6%) and the remaining 36(36.3%) had no feedback forwarded to them.

5.4 Supply Related Factors

The supply related factors affecting the implementation of ICCM are categorized in to three as medical and diagnostic supplies, Non-medical supplies and storage areas.

Table 3-summary of availability of iCCM medical and diagnostic supplies in the health posts of ted Districts of South West Shoa Zone, 2015.

S/ N	ITEMS	WOREDAS								ZONAL	
		Bacho21		Goro		R/Woliss		Wonchi2		No	%
		No	%	No	%	No	%	No	%		
	Amoxicillin	14	66.6	12	57.1	23	63.9	11	45.8	60	60.6
	Cotrimoxazole	18	85.6	17	80.9	29	80.6	21	87.5	85	85.9
	Zinc for Diarrhoea	13	61.9	13	61.9	22	61.1	13	54.2	61	61.6
	Oral Rehydration Salts	18	85.7	15	71.4	21	58.3	23	95.8	77	77.8
Medical supplies	Artemether-Lumefantrine for Malaria RDT	15	71.4	14	66.6	25	69.4	14	58.3	68	68.7
		20	95.2	16	76.2	27	75.0	19	79.2	82	82.8
	Rectal Artesunate	8	38.1	5	23.8	14	38.9	6	25.0	33	33.3
	Baby Paracetamol	11	52.4	12	57.1	25	69.4	16	66.7	64	64.6

From the overall 99 health posts observed during the study, averagely 87.93% of them had available medical and diagnostic supplies, 52.5 % of them had rodent free store house, 60.6% had adequate space of storage in their health post, and 61.4% had non-medical supplies including stationary, registration books and forms during the time of the study.

Table 4-summary of availability of ICCM non-medical supplies and storage space in the health posts of selected districts of south west shoa zone, 2015.

S/N	ITEMS	WOREDAS								ZONAL	
		Bacho		Goro		R/Wolisso		Wonchi		Available in HPs	
		No	%	No	%	No	%	No	%	No	%
Medical	MUAC tape	14	66.6	18	85.7	31	86.1	21	87.5	84	84.8
	Newborn weighing Scale	20	95.2	16	76.2	33	91.6	24	100	93	93.9
	Functional thermometer	13	61.9	14	66.6	21	58.3	20	83.3	68	68.7
	Respiratory Counter	3	14.3	7	33.3	12	33.3	15	62.5	37	37.4
Storage	Free of Rodents	9	42.9	12	57.1	15	41.7	16	66.7	52	52.5
	Adequate space	11	52.4	16	76.1	16	44.4	17	70.8	60	60.6
Non-medical	CCM handbook	17	80.9	15	71.4	26	72.2	22	91.7	80	80.8
	Diagnostic flow charts(Encounter forms)	12	57.1	12	57.1	22	61.1	19	79.2	65	65.6
	Registration Book	21	100	16	76.1	35	97.2	23	95.8	95	95.9
	Drug Control Forms (Requisition, inventory)Immunization (vaccine carrier syringes)	3	14.3	5	23.8	15	41.7	13	54.2	36	36.4
	Stationary (calculator stapler &accordion file),	6	28.6	10	47.6	12	33.3	10	41.7	28	28.3

All variables showing significance value to affect implementation status of ICCM service delivery based up on bivariate logistic regression analysis statistical criteria (p-value <0.025) become candidate for multiple logistic regression analysis

From variables under Health extension related factors age of Health Extension Workers, their perceived benefit from initiation of the program and duration of experience were not found to have

significant value on bivariate logistic regression analysis. In Contrast, the sessions of meetings health extension workers participate per week COR of 3.472[2.69-8.26] had significant association with implementation of ICCM services. Infrastructure coverage for health posts (source of power and water), health extension worker's experience of clinical practice at supervising health center, training and bi-annual meeting of Health extension workers and record of documented feedback from either of health center or woreda were not found to have significance up on bivariate logistic regression analysis. Whereas, number or availability of Community Health Agents (CHAs) COR 0.71, 95%CI [0.21-0.965] and average hours the HEWs work per day COR 8.97, 95% CI [3.73-14.49] were candidate for multivariate analysis.

Documentation of reports and other files COR 0.02, 95%CI [0.006-0.07] and Onsite mentoring of HEWs COR 5.02, 95% CI [2.38-10.62] were proved to be enrolled for further analysis.

Finally, Place of residence of HEWs had significance on bivariate logistic regression analysis with COR of 3.68, 95% CI [1.192-11.362] while their retention from site, provision of motivational activities by either of community or government, and availability of written feedback didn't.

Summary of variables found to have independent effect on implementation status of ICCM are listed in Table () with their final corresponding statistical analysis value (Table 8):-

Table 5- Summary of Significant Bivariate and Multivariate logistic analysis of Variables Affecting implementation of ICCM in selected woredas of South West Shoa Zone, 2015.

S/ N	Variables	Frequency (No)	Percent	Implementation Status		P-Value	COR (95%CI)	AOR(95%CI)
				Good (No)	Poor (No)			
1.	Availability of ICCM reports of 1 year back 1. Missing reports 2. All available	25 74	25. 5 74. 5	3 94	37 23	0.00	0.02[0.006-0.07] 1	0.041[0.008-0.22] 1
2.	Onsite Mentoring of HEWs in previous 3 months 1. at least once 2. Not mentored at least once	66 91	42 58	48 12	43 54	0.009	5.02[2.38-10.62] 1	3.144[1.65-6.52] 1

Table 6-summary of significant bivariate and multivariate logistic analysis of variables affecting implementation of iCCM in selected woredas of south west shoa zone, 2015.

S/ N	Variables	Frequency (No),	Percent	Implementation Status		P-Value	COR (95%CI)	AOR (95%CI)
				Go od (N o)	Por (N o)			
3.	Number of CHAs per Kebele	26	16.6	21	21	0.03	1	1
	1. Greater or equal to 3CHAs	89	56.7	52	37	0.017	0.71[0.21-0.965]	0.624[0.114-0.877]
	2. Less than 3CHAs	42	26.8	34	2	0.034	0.592[0.26-0.92]	0.473[0.19-0.833]
	3. No CHA							
4.	Community Mobilization(Meetings)							
	1. At least once per month	62	39.5	64	18	0.021	3.472 [2.69-8.26]	2.21[1.27-5.46]
	2. None	95	60.5	43	42		1	1
5.	Average hours HEWs work per day							
	1. Greater or equal 8hrs	71	45.2	67	4	0.00	8.97[3.73-14.49]	5.33[2.58-9.33]
	2. Less than 8hrs	86	54.8	56	30		1	1

Implementation of ICCM services were two times more likely implemented (AOR2.21, 95% CI [1.27-5.41]) in kebelles where communities were mobilized or had meeting for at least once per month than those who hadn't mobilized.

The ICCM service coverage were 48% less likely implemented in kebelles possessing standard less than the standard three CHAs than those possessing greater than or equal to three CHAs(AOR 0.624, 95% CI [0.114-0.8777]. Kebelles lacking any assigned CHAs were 53% less likely implemented the program than those possessing the recommended three per kebele with AOR 0.47, 95% CI [0.19-0.83].

Health posts which were serving community for greater than eight hours per day had five times implementation of ICCM services than others only open for customary eight hours per day; AOR 5.33, 95% CI [2.58-9.33].

Health extension workers who were mentored onsite quarterly in the past one year (including register review and case observation) were three times more likely implemented the services three fold than others non-mentored in the previous one year; AOR 3.14, 95% CI[1.65-6.52].

Health posts where proper documentation of reports and documents were less likely implemented the program with AOR 0.041, 95% CI [0.008-0.216].

CHAPTER SIX: - DISCUSSION

The study brought about two major findings. The first was level of ICCM services implementation in the health posts of study area; where 60.6%(61)of them were below cut-off point or mean of 35% .It also extracted factors affecting the implementation status of the program in various aspects which were not addressed and never investigated in the study area. The reason is that the survey of the factors affecting implementation of ICCM was not done in any part of the country and consequently the findings were majorly compared with the neighboring countries with similar implementation and service trend findings.

In this study, access to ICCM service were described as those factors hindering community towards getting adequate services whenever needed by the those in needy.

For instance, from the overall 99 Health posts in the study, the majority (98.1%) use protected source of water like hand pump, wheel and pipe lines but few 1.9% use from unprotected source like lake. Though this do not directly affect implementation of ICCM service, it has role in delivery of quality services at health post level. Regarding power source of the health posts, only17.2percentage had access for electric power whereas, the rest uses the inconvenient solar light and fuel or kerosene. This limits access of services during night times and diverted workers perception of service provision to only half day.

Inadequacy of community Health Agents had a profound effect on implementation status of the program after it produced statistically significant association in multivariate analysis. Currently, minimum of three CHAs are expected per every kebele as policy guide but only 26.8% of kebele had three and more CHAs and even 16.6% lacking any CHA in their kebelles. The ICCM service coverage were 48% less likely implemented in kebelles possessing standard less than the standard three CHAs than those were possessing greater than or equal to three CHAs (AOR 0.624, 95% CI [0.114-0.8777]). Kebelles lacking any assigned CHAs were 53% less likely implemented the program than those possessing the recommended three per kebele with AOR 0.47, 95% CI [0.19-0.83]. This showed the greater role of CHAs in attracting communities toward the services. This was consistent with the qualitative study conducted in rural Kenya, which also identified CHWs un-availability at health post together with low community involvement limited provision of the ICCM services (19).

Implementation status of ICCM service was also found to be affected by approximate duration of hours health extension workers work per day. Health posts which were serving community for

greater than eight hours per day had five times implementation of ICCM services than others only open for customary eight hours per day; AOR 5.33, 95% CI [2.58-9.33]. The other study conducted in Mwanza district of Tanzania also depicted that irregularity of hours community Health workers provide ICCM services affected service coverage(23).

Lastly, recorded demand generation activities that were measured by session of community mobilization in form of meeting per month had greatly affected the implementation status of the program. Implementation or service coverage were twice more likely higher in kebelles where communities were mobilized for at least once per month (AOR2.21, 95% CI [1.27-5.41]). This was found to be argumenta with the study conducted in Rural Kenya, which concluded that regular community sensitization was crucial for optimal functioning of ICCM services and health service coverage as a whole (19). Additionally, another cross sectional study conducted in 32 health facilities of Malawi, Mali and Zambia depicted that low awareness among the beneficiaries of the service affected the ICCM implementation (24).

This study depicted that timely onsite mentoring of Health extension workers that included register review and case observation had greater impact on level of ICCM service coverage. Health posts which received onsite mentoring as per the standard of at least once in a quarter had better implementation of the program which was found significant after multivariate regression analysis (AOR 3.144 CI[1.65-6.52]).

The studies done in rural Uganda also found that supervision were less than optimal. Less than 40% of HSAs included in the sample had received an iCCM-specific supervisory visit in the previous 3 months, and only 16% received a visit that included clinical observation of case management (15). This is with almost the same result with this study outcome of 42.04 % of Health posts mentored of which Only 16.61% were reported case observation.

As stated in inclusion criteria all Health Extension workers participated in the study were all trained on the program and working for at least two years. Few Health Extension Workers (2.6 %) had gone to their catchment's Health center for professional advices and practical attachment in regard with the service they provide; while others had no hint for it and no linkage with their health center.

The survey showed that from overall health posts in the study the implementation status of ICCM were lower among those possessing all documents including reports which could facilitate for

ongoing performance improvement by upper officials. The improper documentation of reports of routine activities provided by HEWs affected the implementation status of the ICCM service delivery by being obstacle to timely response to the ongoing implementation, which showed statistical significance (AOR: 0.041, CI [0.008-0.216]).

All of the Health Extension Workers had participated in review meeting at woreda level at least twice per last one year. But, written or documented feedback from Woreda or Health Center was found in 63.1% and the remaining 36.9% had no feedback forwarded to them.

Hence, woredas prepare HEWs meetings as per the schedule but providing relevant written feedback to each health post was not uniform which further affected improvements of challenges observed by HEWs on ICCM services delivery.

Absence of using LQAS at health post were also common problem as observed in UNICEF's 2012 systematic review report of High burden countries including Ethiopia(27).Consequently, improving quality of reports and feasible program monitoring.

Incentives and any appreciative rewards from community and government had its own influence on coverage of the services package. From this study it was described as construction of residential house for HEWs in the kebele to avail them within the kebele they serve by either of community and Government. As a result, the community constructed shelter for HEWs in, 16.6% of kebelles, government on its behalf about 20.4 % and still 63 % do not have shelter provided by either. This forced the HEWs to live in rental house and others to travel from nearby town so that decreasing their time of stay at health post so that low ICCM service coverage.

Secondly, retention of HEWs from few kebelles (11 HEWs from the four woredas) also affected implementation of the services with adequate manpower thus lowering the coverage. This was also reported in study done by Augustine K. in Mwanza district of Tanzania where CHW's turnover lowered ICCM service coverage (23)

Perceptions of HEWs towards the program were good or as beneficial for them and for community. The FGD findings of qualitative study conducted in Malawi also described Health Service Assistants (equivalent of HEWs) and Managers positive perception of the program (25).

Though educational opportunities had been provided to around 7% of HEWs of study area from the past two years including those on study; there was complain of tight chances and career progress where. This is the same with report of Assessment mission in Malawi where HSAs complained lack of chances to become assistant Nurse (24).This had an association with

implementation status up on bivariate analysis though its effect was not profound on multivariate level. However, the more educational opportunities provided, the more sense of on job competition created among HEWs and better implementation of the program.

The study showed that majority(87.1%) of the health posts had adequate essential medical supplies though it vary within and among woredas but non-medical supplies was scarce in most of them. In contrast, another study conducted in Malawi reported 47% of CHWs had standard essential ICCM commodities (25).Storage room was commonly not adequate, there was no separation of commodities and rodents sometimes eat up the supplies.

There was no knowledge of forecasting for future demand by Health extension workers and frequent stock out was common that is linked with untimely requisition of supplies by them and irregular provision of some commodities by health centers and woredas. The base line study conducted in Rwanda showed that frequent stock out of supplies related with limited capacity of CHWs More than 76% of the health posts receive their supplies from resupply point by their own while others receive through focal persons and commonly assigned professional to the kebelles(22).

CHAPTER SEVEN: - CONCLUSION AND RECOMMENDATION

7.1 Conclusion

The study explored many findings with regard to factors affecting implementation of ICCM by Health extension workers. Nationally, it could be the first to assess for the factors affecting the implementation of ICCM and one of few studies conducted on ICCM in Ethiopia like the

Evaluation Research done by Jimma University on implementation strength and quality of care in two Zones of Oromia region (Jimma and west Hararghe) post initiation of the program in the country. From the total health posts included in the study, only 60.6 % (61) of them had good implementation status based on mean coverage of ICCM services of the health posts and judgment criteria. This reflects that there is still a long way towards better implementation of the program

Firstly, health Extension Workers related factors like their place of residence had major influence on implementation of the program. This was also seen in terms of total working hours of HEWs per day in the health post that posed another challenge. The other is frequent sessions of meetings in which HEWs are involved specially with different sectors. Due to this, time of providing service at health post were wasted on frequent meetings. Few HEWs also perceived the program as burden of additional work rather than thinking it as it is beneficial for them and key of solving the problem of hard to reach community who are in greater need of ICCM services. Majority of the health posts had no residential house for HEWs though community and government had tried a little in constructing it. This minimizes the time they spent travelling from other areas and enables provision of services 24 hours a day and 7 days a week so that the program can be implemented in the deep-rooted manner. Additionally, creating chances of career progression and educational opportunities for HEW creates sense of competition on work so that they can invest their full potential which further facilitated improved service coverage.

On the third stage, supervision and monitoring related factors were found to affect the implementation in the analysis. ICCM based supportive supervision for HEWs during the past six months was too low which contributed to low achievement of the services. Even in those supervised Health post written feedback was not provided accordingly and follow-up was too low. The issue of onsite mentoring that includes register review and case observation was found in few Health Posts. This resulted in delay of timely response for low implementation of the program. Regarding quality of Health posts report amazingly no LQAS was done for all reports of a year back and no one had asked or showed them from supervising health center or woreda.

The access of community to ICCM services was viewed as adequacy of CHAs per kebele who mobilize and aware community towards the services, session of community meetings per month and adequacy of HEWs in the kebele. Correspondingly, there was few kebelles having

recommended CHAs of three per kebele, lesser sessions of community meetings was held and presence of less than two HEWs per kebele affected the implementation of the program.

Medical and diagnostic supplies availability of ICCM essential commodities vary among woredas ranging from not available, inadequate and available throughout the year. Non-medical supplies in most of the health posts are not utilized and remained as packed as during the initiation of the program. The storages of health posts adequacy in space, safety for the drugs and equipment's vary within and among woredas but the greater majority had no specified room ,rodent attacks was common, and forecasting for their future demand was also new to HEWs.

Generally, average hours health extension workers provide service per day, availability of community health agents (CHAs), sessions of community mobilizations per month and documentation of reports and other documents had independent effect on implementation of the program by health extension workers at health post.

7.2 Recommendation

The findings of this study are crucial for all stakeholders starting from woreda health offices to policy makers and managers. For better implementation of ICCM services intervention should be

taken by all of the concerning bodies starting from health extension workers to regional and policy makers.

➤ **Regional Health Bureau and policy makers**

- ☆ Clear career progression and broader educational opportunities should be planned and provided for Health extension workers.
- ☆ Ensure reliable iCCM supplies for implementing woredas.

➤ **Woreda Health office**

- ☆ Construction of shelter for HEWs in their serving kebele by combined effort community or by allocating adequate budget as it is a must
- ☆ Provide timely written feedback after regular supervision, and prepare experience sharing among health posts with better implementation status.
- ☆ Incentives and motivational activities initiation can minimize HEWs turnover and more focus should be given for those working in remote or hard to reach kebelles. This could be like simple rewards or recommendation letter for best performers during review meetings.

➤ **Supervising Health centers**

- ☆ Regular supervision and onsite monitoring of health posts with the standardized set of schedule by assigned professional and ICCM focal persons.
- ☆ Timely deliverance of written feedback and follow up for the improvements
- ☆ Initiating LQAS system at health post or Health center by refresher training to improve the quality of reports
- ☆ Those HEWs residing in their kebele should be forced to work full hour as it is their professional ethics.
- ☆ Regular community mobilization to increase awareness towards the services
- ☆ Filling gaps of CHAs as per the standard by competent and influential volunteers.
- ☆ Availing all necessary medical and non-medical supplies

➤ **Health Extension Workers**

- ☆ Should forecast their future needs before stock out
- ☆ Utilize tracer cards of drug control forms.
- ☆ Utilize all available equipments as per the standard than keeping them packed.

- ☆ Should rehearse their perception toward the program and primary role of serving community through health service activities.

References

1. Integrated Community Case Management of Childhood Illness in Ethiopia;Nation Wide Approach of Implementation,UNICEF, 2012.
2. Community Case Management Of pneumonia,Diarrhoea and Malaria In Ethiopia, Scale-up Review, UNICEF,2012.
3. Manual I, Guide TU. Integrated Community Case Management (iCCM) Costing and Financing Tool Implementation Manual & Tool User Guide. (iCCM).
4. Downey S. Community Case Management Overview. 2011; Implementation strategies and componets developed for sub-saharan Africa,2011./
5. Hamer DH. Integrated Community Case Management (iCCM) in sub-Saharan Africa. (iCCM),2014.
6. Statistics H, Systems I. WHO-CHERG methods and data sources for child causes of death. 2013;(June) 2013.
7. Bay G, Miller T, Fajier DJ. child Mortality levels and trends. Estimates developed by the UN inter-agency group. 2014;
8. UNICEF. UNICEF, trends of death from Malaria in under five children. 2014. p. [Http://data.unicef.org/child – health/malaria#sthash](http://data.unicef.org/child-health/malaria#sthash).
9. <http://data.unicef.org/child-health/diarrhoeal-disease#sthash.hEmlnxaS.dpuf>. Diarrhoea remains a leading killer of young children,UNICEF report of 2014. 2014.
10. Report P. Committing to Child Survival : A Promise Renewed Progress Report 2014. 2014.
11. Studies CC. Global Experience of Community Health Workers for Delivery of Health Related Millennium Development Goals :2014.
12. Walker PR, Downey S, Crigler L, Leban K, International V, Consulting CG, et al. CHW “ Principles of Practice .” (April 2013):1–22.
14. Bennett S, George A, Rodriguez D, Shearer J, Diallo B, Konate M, et al. Policy challenges facing integrated community case management in Sub-Saharan Africa. Trop Med Int Health. 2014;19(7):872–82.

15. Rutebemberwa E, Kadobera D, Katureebe S, Kalyango JN, Mworozzi E, Pariyo G. Use of Community Health Workers for Management of Malaria and Pneumonia in Urban and Rural Areas in Eastern Uganda. 2012;87(Suppl 5):30–5.
16. Guenther T, Sadruddin S, Chimuna T, Sichamba B, Yeboah-antwi K, Diakite B, et al. Beyond Distance : An Approach to Measure Effective Access to Case Management for Sick Children in Africa. 2012;87(Suppl 5):77–84.
17. Mukanga D, Tibenderana JK, Peterson S, Pariyo GW, Kiguli J, Waiswa P, et al. Access , acceptability and utilization of community health workers using diagnostics for case management of fever in Ugandan children : a cross-sectional study. 2012;1–10.
18. Qualitative study to identify solutions to local barriers to care-seeking and treatment for diarrhoea malaria and pneumonia in select high burden countries Report on findings from Kenya. 5603.
19. Seidenberg PD, Hamer DH, Iyer H, Pilingana P, Siizeele K, Hamainza B, et al. Impact of Integrated Community Case Management on Health-Seeking Behavior in Rural Zambia. 2012;87(Suppl 5):105–10.
20. Report E, Health C, Performance W. Community IMCI / Community Case Management Evaluation Report of Community Health Workers Performance. 2009;(May).
21. Review of Integrated Community Case Management Training and Supervision Materials in Ten African Countries. 2013;(November).
22. Chandani Y, Noel M, Pomeroy A, Andersson S, Pahl MK, Williams T. Factors Affecting Availability of Essential Medicines among Community Health Workers in Ethiopia , Malawi , and Rwanda : Solving the Last Mile Puzzle. 2012;87(Suppl 5):120–6.
23. Kiplagat A, Musto R, Mwizamholya D, Morona D. Factors influencing the implementation of integrated management of childhood illness (IMCI) by healthcare workers at public health centers & dispensaries in Mwanza , Tanzania. 2014;1–10.
24. Nsona H, Mtimuni A, Daelmans B, Callaghan-koru JA, Gilroy K, Mgalula L, et al. Scaling Up Integrated Community Case Management of Childhood Illness : Update from Malawi. 2012;87(Suppl 5):54–60.
25. Callaghan-koru JA, Hyder AA, George A, Gilroy KE, Nsona H, Mtimuni A, et al. Health Workers ' and Managers ' Perceptions of the Integrated Community Case Management Program for Childhood Illness in Malawi : The Importance of Expanding Access to Child Health Services. 2012;87(Suppl 5):61–8.

26. Assessment of ICCM Implementation Strength and Quality of Care in Oromia , Ethiopia Final report January 2013. 2013;(January).27. Health C, Paper W, Division P. Review of Systematic Challenges to the Scale-up of Integrated Community Case Management. 2013;(April),UNICEF.
28. Ye-ebiyo Y, Kitaw Y, Yohannes AG, Girma S, Desta H, Seyoum A. Study on Health Extension Workers: Access to Information , Continuing Education and Reference Materials.
29. Asbroek AHA, Kirkwood B, Meek SR, Benton L, Strachan DL, Ka K, et al. Interventions to Improve Motivation and Retention of Community Health Workers Delivering Integrated Community Case Management (iCCM): Stakeholder Perceptions and Priorities. 2012;87(Suppl 5):111–9.
30. Mangham-jefferies L, Mathewos B, Russell J, Bekele A. How do health extension workers in Ethiopia allocate their time ? 2014;12(1):1–12.
31. Dr,Luis G. Sambo, Dr. Rufaro R. Chatorra , Ms Simeone Goosen ,Tools for assessing the operationality of District Health Systems,WHO 2003.

ANNEX

Questionnaire

The survey instruments sand primary indicators of assessing factors affecting Implementation of Childhood Illnesses In Selected woredas of South West Shoa Zone, Central Ethiopia 2015.

Date of Interview	_____
Name of Interviewer	_____
Name of HEW interviewed	_____
Name of woreda	_____
Name of kebele	_____
Supervising Health center	_____
Month and Year HEW started providing ICCM	_____

For each of the questions under each categories please circle the response for Yes /No questions and fill the blanks for word or numeric responses.

I. Service Access Barrier

- 1) What is the total population of the HEW's kebele? _____
- 2) How many households are in the kebele? _____
- 3) How many under five children are the in the kebele? _____
- 4) Are there more than one HEWs in this kebele?
A) Yes B) No
- 5) How many Voluntary community health workers are there in the kebele? _____
- 6) What is the source of water for the health post?
 - a) Hand pump

- b) Well
 - c) Lake
 - d) Pipe water
- 7) What is the source of power or electric for the health post?
- a) electric power
 - b) Kerosene
 - c) candle
- 8) What is the total number of visits to the health post for all services during the previous month? No. of visits: _____
- 9) How many of these visits were made by children from 0 up to 5 years?
Visits by children under 5: _____
- 10) How many of these child visits were made by male children?
Visits: _____
- 11) How many of these child visits were made by female children?
Visits: _____
- 12) How many of these visits were made by children between the ages of 0 to 2 months?
Visits by children 0 day–2 months: _____
- 13) From the total registered sick babies of 12 months back:-
- a) How many of them are treated for Pneumonia? Male ___ Female _____
 - b) How many of them are treated for Diarrhoea? Male _____ Female _____
 - c) How many of them are treated for Malaria? Male _____ Female _____
 - d) Other diseases _____
- 14) For fevers, do you test by RDT always to confirm malaria? a)Yes b)No
- 15) If RDT is negative which of the following, do you do?
- a) Provide treatment
 - b) Record the patient as negative on register
- 16) In average, how many hours per day are you available to work as HEWs? _____
- 17) Where do you provide clinical service?
- a) Health post
 - b) Moving within the community

18) Sessions of documented demand generation activities done by HEWs and VCHWs per month? _____

II. Monitoring and Evaluation

19) How many HEWs are trained on ICCM? _____

20) How many ICCM reports of the past six months are there? _____

21) How many times during the last six months did the facility received Supervisory visit? ___

22) Did LQAS done for each reports? If yes how many times? _____

23) Did you received onsite mentoring by supervisors at least once in the past three months?

A) Yes B) No

24) If yes, which of the following is conducted?

A) Register review

B) Observation of consultation during case management

25) Did you received clinical practice at health center during the past three months?

1) Yes 2) No

26) If yes on what procedure?

27) How many times did you attended PRCM at woreda level in the past one year? A) Once

B)Twice C)None

28) How many documented feedbacks are given from health center or woreda regarding ICCM service? _____

III. HEWs Related Factors

- 29) Socio-demographic characteristics of HEWs
- 1) Age _____
 - 2) Marital status A)Single B)Married
 - 3) Years of Experience _____
 - 4) Place of residence a) within kebele b) from other kebele
- 30) How many Meeting sessions HEWs participate per week? _____
- 31) What are benefits of ICCM for you as HEW?
- a) _____
 - b) _____
 - c) _____

IV. Health System Related factors

- 32) What are any motivations or incentives provided for you from community or government?
A)_____ B) _____
- 33) Did you get any educational chance and engaged for progression on your career from HEW?
- 34) Is there retained HEW from the kebele? If yes How many? _____

V. Supply Related Barriers

For each items listed below, check their presence at the health post during interview and tick with their corresponding findings.

Category	S/N	Item	Check for Availability of each and tick correspondently			Comments
			Not available	Adequate stock	No expired	
Medicine and diagnostic Availability	1	ACT				
	2	Amoxicillin				
	3	Cotrimoxazole				
	4	Baby Paracetamol				
	5	Zinc				
	6	Rectal Artesunate				
	7	ORS				
	8	RDT				
	9	Functional thermometer				
	10	Watch, clock or ARI or Functional respiratory counter				
	11	MUAC tape strips				
	12	Newborn Weighing scale				

Category	S/N	Item	Check for each and tick correspondingly			Comments
			Yes	No	Not there	
Medicine and diagnostic storage	13	Storage area free of rodents or insects				
	14	Storage area secured with lock and key				
	15	Medicines are protected from direct sun light				
	16	Medicines are stored at appropriate temperature				
	17	Space is sufficient for quantity of medicines to be stored				

Category	S/N	Item	Check and tick for each		Comments
			Yes	Not there	
Non- Medical Supplies availability	18	CCM handbook			
	19	Diagnostic booklet			
	20	Encounter forms (check-lists to assess, classify, treat, counsel)			
	21	Child treatment register with blank pages(both)			
	22	Referral forms			
	23	Drug control forms inventory, requisition)			
	24	Immunization Syringe			
	25	Vaccine carriers			
	26	Spoons to stir tablets and 1L container for ORS			
	27	Accordion file to organize forms			
	29	Stapler and Calculator			

Gaafannoo

The survey instruments and primary indicators of assessing factors affecting Implementation of Childhood Illnesses In South West Shoa Zone, Oromia Region; South West Ethiopia.

Guyyaa gaafatame _____

Maqaa Gaafataa _____

Maqaa HEF gaafatamtee _____

Maqaa Aanichaa _____

Maqaa Gandichaa _____

Buufata Fayyaa K/Fayyichaa jala jiru _____

Baatii fi Waggaa HEF tajaajila ICCM kennuu jalqabde _____

Gaaffiiwwan armaan gaditti tarreeffamaniif; Kanneen deebiisaanii Eyyee fi mitii ta'aniif deebiikee itti Mari, Kan bakka duwwaa qabaniif deebii jechaa yookaan lakkoofsaa guuti.

I) Dhowwitoota Argatiinsa Tajaajilaa

- 1) Baayinni Uummata Ganda kanaa hagami? _____
- 2) Ganda kana keessa Abbaa warraa meeqatu jira? _____
- 3) Daa'imman umuriisaanii Waggaa shanii gadii ganda kanaa meeqa? _____
- 4) HEF tokkoo oltu ganda kana keessa jiraa? A) Eyyee B) Miti
- 5) HFFH meeqatu ganda kana keessa jira? _____

HEF: - Hojjetuu Ekisteenshinii Fayyaa HFFH: -Hojjetoota Fedhii Fayyaa Hawaasaa

- 6) Maddi tajaajila bishaanii kellaa Fayyaa kanaa maali?
- e) Paampii harkaan raafamu
 - f) Bishaan Boollaa yookaan Biirri
 - g) Bishaan Lagaa
 - h) Bishaan boombaan diriirfame
- 7) Maddi humna elektirikaa kellaa Fayyaa kanaa maali?
- d) Annisaa elektirikaa
 - e) Boba'aa gaasii yookaan kiroosinii
 - f) Dungoo
- 8) Baayinni dhukkabsattoota tajaajila kellaa Fayyaa kanatti yaalamanii Kan ji'a darbee waligalatti meeqa? _____
- 9) Kanneen keessa daa'imman umuriinsaanii Waggaa shanii gadii meeqatu yaalame? _____
- 10) Daa'imman Waggaa shanii gadii yaalaman kunneen keessa dhiirri meeqa? _____
- 11) Daa'imman Waggaa shanii gadii yaalaman kunneen keessa dhiirri meeqa? _____
- 12) Baatii darban kudha lama keessatti daa'imman umuriinsaanii dhalootaa hanga ji'a lamaa meeqatu yaalame? _____
- 13) Daa'imman umuriin isaanii ji'a lamaa hanga Waggaa shanii akka waliigalaatti Baatii kudha lamaan darban keessatti yaalaman keessaa :-
- e) Hagamtu dhibee nimoonyaatiif yaalame? _____ Dhiira ____ Dhalaa ____
 - f) Hagamtu dhibee garaa kaasaatiif yaalame? _____ Dhiira ____ Dhalaa ____
 - g) Hagamtu dhibee busaatiif yaalame? _____ Dhiira ____ Dhalaa ____
 - h) Dhibee biraaf _____
- 14) Dhukkabsattoota Dhagna gubaan qabaniif yeroo hunda *RDT*' dhaan qorattanii busaa ni mirkaneeffattuu ? A) Eyyee B) Miti
- 15) Yoo firiin RDT negaatiiva ta'e Kan armaan gadii keessaa kamiin raawwattu?
- c) Yaala qorichaan goonaaf
 - d) Dhukkabsaticha akka negaatiiva ta'etti galmeessina
- 16) Akka waliigalaatti guyyaatti sa'atii meeqa akka HEFTti hojjetta? _____

17) Yeroo hedduu bakka kamitti tajaajila kennitu?

- c) Kellaa Fayyaatti
- d) Hawaasa keessa deemuun

18) Ji'a darbe keessatti hojiileen Hawaasa dadammaqsuu fi barsiisuu HEF fi HFFH'n hojjetamanii galmaa'anii jiran marsaa meeqa? _____

II) Hordoffii fi Deggersaa

19) Kellaa Fayyaa kanarraa HEF meeqatu ICCM irratti leenji'e? _____

20) Gabaasa ICCM ji'oota ja'an darban keessaa Kan Baatii meeqatu jira? _____

21) Ji'oota jahan darban keessatti Hordoffii yookaan superviyzinii ICCM irratti hundaa'e si'a meeqa geggeeffame? _____

22) Gabaasawwan ICCM ji'aa argamaniif LQAS yookiin Mirkaneessa Sadarkaa Qulqullina Gabaasaa meeqansaaniif hojjetame? _____

23) Ji'oota sadan darban keessatti deggersaa fi Hordoffii bakka hojiitti yoo xiqqaate al tokkoo argattaniittuu? A) Eyyee B) Miti

24) Eyyee yoo ta'e kunneen gadii keessaa yeroosanatti kamtu raawwatame?

1) Sakatta'iinsaa fi ilaalcha Galmee daa'imman dhukkubsatanii

2) Xiinxala fi daawwannaa yeroo wal'aansa HEF gootuu

25) Ji'oota sadan darban keessatti shaakala ogummaan walqabate Buufata Fayyaatti shaakaltanii beektuu A) Eyyee B) Miti

26) Waggaa darbe tokkoo keessatti Gamaggama raawwii fi adeemsa Hojii Sadarkaa aanaatti geggeeffame yoo xiqqaate si'a lama hirmaattaniittuu?

A) Eyyee B) Miti

27) Ji'a jahan darban keessatti dubdeebii Buufata Fayyaas ta'u aanaa irraa kenname galmaa'e meeqatu jira? _____

III) HFFH'n Kan walqabate

28) Al-hawaasummaa fi Haala jireenyaa HEF

5) Umurii _____

6) Haala Fuudhaa fi Heerumaa A) Hin heerumne B) Heerumteetti

7) Muuxannoo Hojii waggaan _____

8) Bakka jireenyaa a) Ganduma hojjetu keessa b) Bakka biraarraa Deddeebiin

29) Akka HEF tti turban keessatti walga'ii garaa garaa si'a meeqa hirmaattu? _____

30) Bu'aan ICCM Kun Hojii keessan keessatti isiniif buuse fi gargaare maal fa'i?

a) _____

b) _____

c) _____

IV) Qajeelcha Sirna Fayyaa kan Walqabatan

31) Gochaalee fi Onnachiiftuu Hojii keessaniif isin kakaasu fi gargaaru isin Hawaasaa fi mootummaarraa argattan maal fa'i? _____

32) Erga Hojii kana jalqabdanii Carraa barumsaas ta'e guddina Sadarkaa Hojii argattan qabduu? A) Eyyee B) Miti

33) Ganda kanarraa HEF Hojii gadi lakkifte jirtii tureeraa?

A) Eyyee B) Miti Eyyee yoo ta'e meeqa? _____

V) Rakkoo Dhiyeessiin Walqabatan

Kanneen armaan gaditti tarreeffamaniif Kellaa Fayyaa keessa jiraachuu, kuusaa gahaa fi yeroon tajaajila isaanii yeroo afgaaffii mirkaneessitii jala isaaniitti mallattoo sirrii (tick) godhi.

Qoodama	T/L	Qorichootaa fi dhiyeessii	Jiraachuu kanneen armaan gadii ilaalii bu'aa argattejalatti mallattoo sirrii godhi			Yaada
			Hin jiru	Kuusaa gahaa ji'a kanaafgahu ni jira	Yeroon turtiisaa itti darbeera	
Jiraachuu Qorichaa fi meeshaalee Qorannoo	1	QorichaFarra busaa				
	2	Amooksisiliinii				
	3	kotrimokzaazoolii				
	4	Parasitamolidaa'imani				
	5	Zinkii				
	6	Artesunatikarabobbaakenamu				
	7	ORS				
	8	RDT				
	9	Thermometer hojjetu				
	10	Lakkooftuudaqiiqaa,Sa'aatii fi lakkooftuuhargansuuhojjetan				
	11	SafartuuMUAC				
	12	Safartuu (mijjana) unfaatinadaa'immanii				

Qoodama	T/L	meeshaalee	Jiraachuu kanneen armaan gadii ilaalii bu'aa argattejalatti mallattoo sirrii godhi			Yaada
			Eyyee	Miti	Hin jiru	
Kuusaa qorichaa fi Qorannoo	13	Kuusaanilbiisotaa fi hantutarraa bilisa				
	14	KuusaanKuusaanqulfiififurtuuqaba				
	15	Qorichoonni ifa aduu cimaarraa eegaman				
	16	Qorichoonni tempirechera sirritti kuufaman				
	17	Bakka kuusaa qorichaaaf gahaadha				

Qoodama	S/N	Meeshaalee	Jiraachuu kanneen armaan gadii ilaalii bu'aa argattejalatti mallattoo sirrii godhi			Yaada
			Eyyee	Miti	Hin jiru	
Jiraachuu Dhiyessii qorichaan alaa	18	KitaabaCCM				
	19	Buukletiittin dhibee addabaasan				
	20	Foormii murteessoo (check-lists to assess, classify, treat, counsel)				
	21	Galmees daa'imman dhukkubsatanii				
	22	Foormii rifeeraalaa				
	23	Foormii qorichaittiin gaafataniif guutan				
	24	Lilmoo talaallii				
	25	Baattuu qorichaa talaallii(Vaccine carriers)				
	26	Fal'aanaittiin qorichaa caccabsaniifi qodaalitira 1 ittiin ORS bulbulan				
	27	Kuusaa faayila garagaraa				
	29	Stepleri fi kalkulatara				